THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXXI. THURSDAY, OCTOBER 20, 1864. No. 12.

PAINLESS DELIVERY. HÆMORRHAGE. TURNING. RECOVERY.

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[Communicated for the Boston Medical and Surgical Journal.]

SEPT. 25th, 1864.—Mrs. ——, æt. 40, multipara, had passed, as was supposed, four weeks beyond the natural term of pregnancy. At about 4, A.M., of the above date, she rose to pass water, having not felt the least uterine action. Along with the urine there was a rush of a fluid, which was at once followed by extreme faintness. She was lifted into bed, and the flowing continuing, the vessel was examined, and was found nearly filled with blood. I was called, and living near, soon reached the address. I found Mrs. —— still faint, but the hæmorrhage had ceased. She had in a former labor been seized with faintness, accompanied by hæmorrhage. I was then called in consultation. The labor having advanced, delivery was effected by the forceps. For the distress, stimulants were given at once, and fair reaction followed.

Upon examination in the present labor, the os uteri was found soft and dilatable. The placenta did not present. Thinking I might need aid, I sent for my friend, Dr. F. Minot, who living near, soon arrived. Hæmorrhage occurred soon after, and it was agreed that delivery should be at once attempted. Having before inhaled ether, she desired to inhale it again. This she did, and during fair etherization the child was turned. Ether was asked for, not on account of pain or suffering from uterine contraction, but because of the pain which accompanied the attempt to pass the hand into the vagina before functional dilatation or dilatability had occurred in the os externum. I have not met with a case in which turning was done with more ease, until the head was about to pass the os. This then contracted, and was evidently descending with the head behind it. Dr. Minot was now desired to pass his hand into the vagina, and support the os while an extracting effort was made. He did this, and dilatation soon occurring, the delivery was accomplished with great ease—the child, membranes and placenta coming away together. The child

did not breathe at first, but soon a faint but distinct cry was heard coming from the confused mass which had just been delivered. Upon admitting air freely to the child, respiration was at once fully established. The child, a female, weighed nine pounds.

The womb contracted well, but relaxation followed, with accompanying hæmorrhage. A firm compress and binder were at once employed, and the tampon introduced. It was necessary to use brandy freely, as slight bleedings occurred, which were always accompanied by failing pulse and *faintness*. As I had before found much benefit from using laudanum in uterine hæmorrhage after labor, I now gave it; viz., a drachm of laudanum in three ounces of infusion of ergot, in divided doses. When hæmorrhage is pressing after delivery, and brandy has been freely given, and flowing continuing, I have given a drachm of laudanum at once, with most excellent results. An English writer, many years ago, printed a monograph on the use of laudanum in uterine hæmorrhages. His beginning dose was 80 drops. If memory serve, the name of the writer of the above work was Stuart. Not long since, a physician from the country called on me for consultation. I asked him if he had ever given laudanum in uterine hæmorrhage in or rather after labor. "Yes," said, he, with emphasis. In what doses? "A teaspoonful, and with admirable effects." In Mrs. ——'s case its effect was immediate and *permanent*. I have underscored this word, because other agents, as brandy, &c., frequently require to be repeated. May not laudanum have some specific effects upon the small vessels, stimulating them to permanent contraction, and thus saving life? Full vomiting occurred in Mrs. ——'s case, but this gave me no uneasiness, as I had seen before, in apparently hopeless cases, vomiting followed with excellent and permanent results, and where those around have supposed death to be unavoidable. The *rationale*—the strong contraction of the stomach in full vomiting is by sympathy communicated to the womb, and uterine relaxation no longer occurs.

Support of the os uteri during turning in the above case was practised from recollection of a very interesting case reported to me by my friend H. R. Storer. In his case, which was one of natural labor, the os contracted so strongly round the *neck* of the child as to make a most troublesome complication in the delivery.

Mrs. —— has not been raised from the *horizontal position* since her delivery, now full twelve days ago. She has not met with the least accident. Her recovery is making excellent progress. She is fed at all her meals—in short, does not move except by foreign aid. The reader may think me more cautious than wise. But I have heard from others, and from books, how sad and how fatal has been too early rising after labor complicated with hæmorrhages, and after operations which have been done to prevent further loss of blood. I will give a sketch of a case which may show how important is after-treatment in the cases just referred to.

Mrs. —— had inverted womb of long continuance. She was made perfectly bloodless by the flow. Its cause was not known. A friend was called in, and discovered inversion. I have been consulted in three other cases, in neither of which did the medical attendant know what caused the hæmorrhage.

My friend Dr. —— was called in, and made an examination which showed the cause of the hæmorrhage. I was asked to be present at the operation for removing the inverted organ. The operation was done. Positive orders were given not to raise the patient from the horizontal position until directed by her physician. Everything promised recovery. Three weeks had passed without accident. The ligature was daily tightened, and the womb at our last visit hung by a thread only, as the phrase is. We were suddenly called to see Mrs. ——, and found her dying. What had happened, or what had been done? "Nothing," said nurse and friends. "She was so well that we only raised her up to put on some clean clothes and arrange the bed, and she fainted away, and we cannot bring her to." She died.

Denman gives a case in which the patient, who had flowed excessively, was only raised up on her elbow to drink, when she fainted, fell back, and died.

The case which forms the subject of this paper was new to me. There was not, during its whole length, the least uterine action. At least there was no pain. And yet the placenta was entirely separated from the womb, and was lying loose in its cavity, the membranes being unbroken. We can understand how, in *placenta prævia*, the placenta may be more or less detached, merely by the development of the cervix and os which precedes labor, and how this process may be painless. But in the case reported, the placenta and membranes had been detached from the womb, and the os opened without the least consciousness on the part of Mrs. —— that any such changes had occurred; and this was her eighth child. After-pains were very slight, and the womb became unusually small, and very firm, or solid, from the time of the expulsion of the child and afterbirth. The abdomen was large—unusually large, the second morning after delivery. This was found to be owing to the distension of the bladder by urine. Its size entirely disappeared after the catheter was used. Milk formed as usual, but such was the patient's exhaustion that the child has not been nursed.

I have met with cases of *painless* labor—one patient asking me to examine, as she rather thought the child was nearly born; and I found this opinion confirmed by immediate delivery, without pain, or pain worth noticing. Such patients know when labor begins, but apparently by instinct, rather than by experience. Now my patient had not the least intimation of the existence of labor. She rose, as above said, and had frequently done so before, in her present pregnancy, to empty the bladder, and but for faintness knew of no other

change from what, under similar circumstances, she had experienced before—the bladder being frequently irritable in advanced pregnancy.

Oct. 8th.—Mrs. —— is without complaint; appetite and strength good. Feels well enough to get up and walk about, but is directed to keep patiently in bed.

DR. GAILLARD'S PRIZE ESSAY ON OZONE; ITS RELATIONS TO HEALTH AND DISEASE.

[Continued from page 222.]

We can understand, also, why malarial diseases should prevail in countries previously unvisited by them. Let us explain this:—Chemical and physical agencies produce ozone; the decay, diseases and deaths of animals and plants consume it. Have the balance between the relative amounts of ozone and miasm destroyed, and disease prevails. Again, have this balance undisturbed, but introduce high solar heat, and disease also prevails. Let solar heat be no higher than usual, but have an unusual and inordinate generation of miasm, and the result is again the same. Lastly, let us have protracted and intense solar heat, with the extreme of animal and vegetable decomposition, and malarial diseases of malignant type invariably prevail; this is seen in the tropics. This balance between the chief cause and the preventive agent of such diseases, is unfortunately too little hypothetical, for its existence and disturbance is constantly seen in Southern latitudes. Ozone is manifested in the atmospheres of large pine forests. The ozonic atmosphere of villages, in such localities, is usually sufficient to protect them from malarial fevers, provided the surface of the soil be not too long neglected. Unless the decaying mass of vegetable matter on such soils be destroyed by burning it, or in some other manner, and the usually recognized sources of malaria be thus destroyed, severe forms of fever not unfrequently prevail. If these consumers of ozone be destroyed, such villages usually remain healthy, but a long neglect of this precaution soon entails its own penalty. It has been the history of most of the newly-settled States of America, that they were first remarkably healthy, that they then became unhealthy, and then returned to their original condition. It requires, apparently, very little to disturb the balance between health and disease; any of the causes enumerated being quite sufficient to produce this effect.

In moving into a "new country," the decadentia of the soil is found, though in immense mass, in a quiescent state. Let us trace the effect of settlement. The various instruments of terra-culture are soon set in motion; the decaying mass of vegetation is upturned, scattered, and, by increased exposure of surface, converted by summer suns and rains into material for the prompt and fatal generation of disease. The ozonic principle of such atmospheres is sub-

jected to a double source of destruction—the miasm generated, and the decaying vegetable mass which generates such miasm. Malarial diseases are now rife. But these temporary causes are removed; decay takes place, vegetation is soon resolved into its primitive elements, and banished health returns again. In alluvial soils, these causes are permanent, and with the existence of permanent causes we have permanent effects, in malarial diseases constantly manifested. In tropical regions, where we have an exaggeration of these evils, malarial fevers prevail at all seasons and with great malignity.

The remarkable properties of ozone explain to us the cause of that marked mitigation of symptoms, in such fevers, on the supervention of a thunder storm. The oxidizing properties of ozone make intelligible the existence of malarial diseases in ferruginous localities—as in India. After a thunderstorm, the mephitic exhalations of the atmosphere are destroyed. In the iron districts, the peculiar soil rapidly consumes, by oxidation, the ozone generated. We have thus shown that the dangerous accumulation of miasm is prevented by ozone, whilst the pernicious concentration of ozone is diminished by miasm; that miasm being productive of malarial fevers, any agent, capable of destroying or diminishing it, bears, by its proportionate presence or absence, the closest relation to the existence and malignity of such fevers; *that the causes generating ozone, or the supply of ozone, are least in summer; that the consumption of ozone is greatest in summer; that the effect of these causes is the absence of ozone; that the absence of ozone coincides with the existence of malarial fevers; that the existence of such fevers is in a direct ratio with the presence or absence of ozone; and finally, that there is thus established a convincing evidence of the relation of ozone to malarial fevers.* This, at least, has been the object of the few last pages. It may be urged, however, that these are but declarations, or even speculations, and that to produce conviction they should be fortified by evidence and testimony. An increasing scepticism, in the profession, has at least accomplished this important result, that theory and hypothesis are no longer attractive, and that fact and testimony are made the great touchstone for all that is offered for currency. We then exchange reasonings and deductions, in establishing this position, for the materials now so rigidly demanded, and offer in their place testimony and fact. These could be given in detail and endorsed by a long list of authorities, but we will state them briefly and concisely, as the evidence is sufficient to produce conviction in the minds of the most sceptical.

Boeckel's tables show that the presence of malaria coincides with the zero of the ozonometer, and his tables only reflect his published opinions. He is one of the oldest, best and most reliable of European investigators. The experiments and records of Scoutetten establish the same fact. MM. Schönbein, Bérigny, Wolf, Simonin and others have all adopted the same views; their tables and observations have demonstrated the truth of this position. Our

own experiments and those of one other American observer give the same results. We advocated this view seven years ago. We have received from Capt. Pope, of the United States Army, a most interesting and valuable meteorological table (in manuscript) in regard to the same subject. These tables give the registers of the barometer, thermometer, hygrometer and ozonometer together; with marginal observations on clouds, wind, rain, color of sky, &c., that serve as valuable aids in the study and analysis of all that is recorded. A part of these observations Capt. Pope made at Indianola, Texas; a second part, on the march from the Gulf of Mexico to the higher table lands of the Continent; and the remaining portion, at an altitude of 3,900 feet above the level of the sea, in the open table lands, seventy miles east of the most easterly chain of the Rocky Mountains. These observations are interesting on account of the vast area traversed whilst they were made; as being taken from a section of country but little known to science, and, lastly (which is of the most consequence), on account of the important results they afford. As long as Capt. Pope was on the Gulf coast and in a malarial atmosphere, the register of the ozonometer was never over 2, 3, or 4; most of the time (almost the whole time) at 1; occasionally at 2, and very rarely indeed at 3.

On no section of the American country would one wishing to examine the relations of ozone to malaria be so desirous of making his observations as on the lands bordering the Gulf of Mexico. Most of these observations were made at Indianola, Texas, on Metagorda Bay. Boeckel's testimony is, that the existence of malaria coincides with the zero of the ozonometer; Capt. Pope's tables show, that in the malarial regions of Texas (and we could desire no better type) the *ozonometer almost constantly registered* 1; *at times* 2, *and occasionally* 3. Capt. Pope leaves Indianola on the 6th of April (when ozone should be abundant and malaria comparatively absent), *the ozonometer registering* 2; *his march is towards the high table lands.* On the 11th of the month *the register is at* 4; *on the* 16*th, at* 5; *on the* 21*st and* 23*d, at* 7 *and* 8; *on the* 25*th of April we find it at* 10.* These figures, just given, convey a clearer and more convincing lesson than volumes of theory; they suggest the entire truth belonging to the subject. They tell what a foot note, accompanying the tables, uselessly explains—that the march was from the malarial low lands of Texas to the pure atmospheres of the table lands. About the 1st of May the march is across "the deep valley of Devil's river; heavy growth of timber and rank vegetation." Is there any change in the ozonometer during the march across this malarial valley? It sinks at once from 10 to 5; then to 3; then to 2, where it remains. In emerging from this spot, on the 4th of May, the register is at 3 again; on the 6th of May it rises to 6; and on the 7th and 8th it is where it was be-

* We have all of these tables in manuscript, but they are too voluminous to introduce into an essay of this kind; if ever necessary, they could be submitted in the form of an appendix.

fore entering this locality, at 10. The ozonometric record gives, without explanation, the history of this transit; *it tells its own story.*

But it may be claimed that this is all accidental, a coincidence that might possibly occur; that the deductions made are partial, or at least premature. Let us examine farther, and go to the record for further proof. From the time last mentioned, the register varies, 6, 7, 8, 5, 6, according to the circumstances of the march. About the 21st to the 24th of the same month, the register suddenly falls to 3. Is there any cause for this? In the margin of the tables, we read that the march is now through the valley of the Pecos river. On the 25th, this is almost accomplished; the register is now at 5; the valley is passed, and on the 26th and 27th the register is again at 9. Is this accidental again; is it another coincidence; or does the candid mind of the reader induce him to exclaim, it is the clearest and best of proof? From this time onward the observations were made exclusively on high table lands, where the atmosphere is clear, pure and bracing. We find now that the ozonometric record is almost always at 8, 9 and 10, seldom as low as 6; but three times at 5, and *never once below this.* This embraces a period, from the time of leaving the valley of the Pecos river to the 31st of August. This last period gives the record of the atmosphere in these localities, at the most interesting period of the year, in connection with our subject. In the low malarial lands and valleys, the ozonometer registered 1 to 5; in the table lands it registered 7 to 10, and occasionally 5. In these regions the cold weather soon makes its appearance after this period, and of course the ozonometrical record would be uninteresting, in its relations to malaria. It is sufficient to say, that after this time it remains most of the time above 7 and 8. If, in summer, the record in these localities (on the table lands) is on a moving scale from 7 to 10, we cannot expect, in winter, that it would be otherwise than just mentioned, steadily above 7 and 8. In the malarial period of the year, we find the ozonometer seldom registering more than 2 or 3; at Indianola, even as early as April 6th, it registers only 2. The table-land atmospheres, even in July and August, gave a record of 7 to 10.

These facts are taken from the statistics made at Indianola and on the high table lands adjoining. They need no farther comment than to again draw attention to the striking changes manifested during the transit of the malarial valleys mentioned. We have thus introduced testimony and fact, and leave these to speak for themselves.

Capt. Pope writes, that the inhabitants of these table lands enjoy a marked and unusual degree of health; we know what the malarial fevers of Texas are. If it can possibly be objected, that these observations extend over a very limited period of time (as is apparent), we will, in answer, quote from one of Capt. Pope's autograph letters, December, 1859. "The observations which I send were all care-

fully made, and they will perhaps answer your purpose; those of the subsequent years are almost identical. I have made several journeys across the Great Plains, and have made these observations both going and returning, and they exhibit, in all cases, precisely the results set forth in this paper." The tables sent were made in 1855, and were confirmed by others made in 1856, 1857, 1858, and 1859. Capt. Pope writes, that in his experience "ozone increases in quantity, rapidly and regularly, in receding from the low lands which border the Gulf of Mexico, and is greatest on the summit of the table lands, in the interior. On the low lands, animal and vegetable decomposition is rapid; on the table lands, extremely slow, and with little escape of offensive gases. This difference is manifest, even *when the thermometer marks the same temperature in both regions.* There is but little moisture on the table lands, as the tables show, while there is a great deal on the lands bordering the Gulf of Mexico." On account of this fact of moisture, there should be more ozone in the atmosphere of the low lands than in that over the high table lands; for it is claimed by most observers that moisture is eminently favorable to the production of ozone.

Dr. Smallwood, of Montreal, Canada East, states that "three thousand observations confirm this truth—that ozone is not formed unless the vapor of water be present." When moisture is excessive, as in the low lands of Texas, we can appreciate how great must be the malarial destruction of ozone, and why it is that in such places malarial fevers must become prevalent and malignant. Capt. Pope's carefully and scientifically prepared tables show that it is *not necessary* that there should be any *great deal* of atmospheric moisture to admit of an extensive generation of ozone. His ozonometer frequently gives 8, 9 and 10, when the hygrometer shows that the atmosphere is not damp; though the high registers of the ozonometer most frequently coincide with the damp registers of the hygrometer. In the high table lands a moist atmosphere almost always attends an abundant manifestation of ozone, and conversely; whilst in the low lands both dry and damp atmospheres exhibit but a feeble presence of ozone. Dr. Smallwood's declaration, based on "three thousand" experiments in this connection, is in the main true, "that ozone is not formed unless the vapor of water be present," though Capt. Pope's tables unquestionably demonstrate the fact that it is not necessary that this vapor of water should be so abundant as to constitute dampness in the atmosphere; *for on those high table lands, in the months of July and August, when the hygrometer did not demonstrate a damp atmosphere, the ozonometer recorded* 8, 9, 10 *of the scale.* That a damp atmosphere is favorable to the production of ozone, however, both of these and all other observers testify. Where malarial atmospheres are damp and the ozonometer is at zero, the deduction is irresistible that ozone has been formed and destroyed.

We are then prepared to admit, from theory and fact, that there

is a demonstrable relation between malaria and ozone; between the presence of ozone and the absence of malarial fevers; between the existence of malarial fevers and the absence of ozone. Before passing on to consider another branch of our subject, we will give another quotation from Capt. Pope's letters, as furnishing interesting information relative to the physical and meteorological conditions of these high table lands; information that is in some respects original, and, in every respect, authentic and reliable.

"On the table lands of this continent (New Mexico and elsewhere) there are few if any swamps; the vegetation is extremely sparse, and very imperfectly developed. Forests are rare, except those of pine and cedar, as found on the mountains, and there the trees are stunted and dwarfed. The grass of the table lands is very short, and rarely grows more than three or four inches high. Animal and vegetable decomposition is very slow in its action, and attended with little escape of offensive gases. Very little moisture is found in the atmosphere, and the rain-fall is not one fourth what it is in the driest regions east of the Mississippi. Pulmonary diseases are almost unknown. It is worthy of remark, that in New Mexico (the only inhabited portion of the table lands) smallpox, measles and other cutaneous diseases are almost innocuous; it being very common to see, in the villages, children playing in the streets, while suffering under the worst forms of confluent smallpox. It is but rarely that any marks of the disease are left, and the disease is milder than in any part of the United States. The same may be said of measles, &c.

[To be continued.]

ON THE FUNCTIONS OF THE CEREBELLUM.

By William Howship Dickinson, M.D., Cantab., Curator of the Pathological Museum, St. George's Hospital.

(Abstract.)

The paper is divided into two Parts: the first gives the results of experiments on animals; the second, of observations upon the human being.

Part I.—Assuming that the great divisions of the brain preserve each the same function through the vertebrate kingdom, it is maintained that experiments which can be performed only on such of the lower animals as are very tenacious of life, will afford deductions of universal application.

The method of proceeding with regard to each species was to remove, first, the whole encephalon, with the exception of the medulla oblongata; then in a similar animal only the cerebrum was taken away. The only difference between the two cases was in the fact that one animal had a cerebellum, and the other had not. A comparison was believed to show, in the powers which one had more

than the other, the function of the organ the possession of which constituted the only difference.

Finally, it was ascertained in each species what is the effect of taking away the cerebellum alone.

The use of the organ was thus estimated in two ways—by the effect of its addition to the medulla, and of its subtraction from the rest of the nervous system.

The species so treated are arranged in an ascending scale, according to the comparative weight of the cerebellum. The field-snake, frog, salamander, toad, land-tortoise, eel, water-tortoise, pike, perch, tench, dace, carp, gold-fish, rudd, loach, and gudgeon were subjected to these operations; besides which, many experiments of a less systematic character were made upon birds and mammalia.

The results are these:—

In Reptiles, with the exception of the snake, the cord, together with the medulla oblongata, is sufficient to give the power of voluntary or spontaneous motion—limited, but usually enough to allow of feeble locomotion.

With the addition of the cerebellum, all actions dependent on the will appear to be naturally performed.

The removal of the cerebellum shows that the cerebrum by itself is unable to give more than a limited amount of voluntary motion, and that of a kind deficient in balance and adjustment.

It is therefore inferred that the cord, together with the medulla oblongata, is a great source of spontaneous motor power, in which function both the cerebrum and the cerebellum take part, the cerebellum to the greater extent; it also appears that a certain harmony in the use of the muscles depends on the possession of the latter organ.

Regarding *Fishes*, the cord and medulla oblongata seem unequal to the performance of voluntary motion.

When the cerebellum is added, the powers become so far extended that movements are made in obedience to external stimuli. Generally speaking, a determined position is maintained and locomotion accomplished, without the use, however, of the pectoral fins.

If the cerebellum only be taken away, there is a loss of the proper adjustment between the right and left sides; so that oscillation or rotation takes place. All the limbs are used, but apparently with a deficiency of sustained activity.

It is therefore concluded that with fishes, as with reptiles, the power of intentional movement is shared by both cerebrum and cerebellum; the former in this case has the larger influence.

Such movements as depend on the cerebrum are destitute of lateral balance, are sudden in being affected by any external cause, and are emotional in their character. Such as depend on the cerebellum are mutually adjusted, of a continuous kind, and less directly under the influence of consciousness.

The same facts were supported by experiments on the higher orders of animals; in these it seemed that the cord and medulla are insufficient to excite voluntary movements. The muscles, as with fishes and reptiles, acknowledge a double rule, from the cerebrum and from the cerebellum. The anterior limbs are most subservient to the cerebrum; the posterior to the cerebellum. The limbs on one side are in connection chiefly with the lobe of the opposite side. The absence of the cerebellum destroys the power of lateral balance.

From the negative results of the experiments, it is inferred that the cerebellum has nothing to do with common sensation, with the sexual propensity, with the action of the involuntary muscles, with the maintenance of animal heat, or with secretion.

The only function which the experiments assigned to the cerebellum is such as concerns the voluntary muscles, which receive therefrom a regular supply of motor influence. Each lateral half of the cerebellum affects both sides, but the one opposite to itself most.

The cerebellum has a property distinct from its true voluntary power, which harmonizes the action of the voluntary muscles, and has been described as "coördination."

The voluntary muscles are under a double influence—from the cerebrum and from the cerebellum. The anterior limbs are chiefly under the influence of the cerebrum; the posterior, of the cerebellum. Cerebellar movements are apt to be habitual, while cerebral are impulsive. The cerebellum acts when the cerebrum is removed, though when both organs exist it is under its control.

Part II.—From an analysis of one case of congenital absence of the cerebellum, one of disease of the whole organ, and 46 of disease of a portion of it, the following deductions are stated:—

The only faculty which constantly suffers in consequence of changes in the cerebellum, is the power of voluntary movement.

When the organ is absent or defective congenitally, we have want of action in the muscles of the lower extremities.

When the entire structure is changed by disease, we have loss of voluntary power, either general throughout the trunk, or limited to the lower limbs—which results are about equally frequent.

From the manner in which the paralysis was distributed in cases of disease of a part of the organ, it is inferred that each lobe is in connection as a source of voluntary movement with all the four limbs, but in the greatest degree with the limbs of the opposite side, and with the lower more than with the upper extremities.

The occasional occurrence of loss of visual power, and alterations of the sexual propensity, is referred to the conveyance of irritation to the corpora quadrigemina in one case, and the spinal cord in the other.

From both sources of knowledge it is concluded that the cerebellum has distinct offices.

It is a source of voluntary motor power to the muscles supplied by the spinal nerves. It influences the lower more than the upper limbs, and produces habitual rather than impulsive movements. Each lobe affects both sides of the body, but most that opposite to itself.

Secondly, the cerebellum has a power which has been described as that of "coördination," which is similarly distributed.

Finally, it is suggested that the outer portion of the organ may be the source of its voluntary motor power, while its inner layer is the means of regulating its distribution.—*Proceedings of the Royal Society.*

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY FRANCIS MINOT, M.D., SECRETARY.

SEPT. 26th.—Dr. MORLAND reported the following cases, recently under his care at the City Hospital. The record was made by Dr. John Dole, resident graduate in the Medical Department.

Encephalitis in a Pregnant Woman.—Mrs. ——, 30 years old, well made, of rather full habit, the mother of three children, born at full time without any abnormal occurrence, entered the City Hospital, July 16th, 1864. When first seen, her face was deeply flushed, her eyes widely open and glassy, their pupils permanently contracted and insensible to light; the skin was hot and dry; pulse 120 per minute, full and hard; respiration 48, and of a hurried, nervous character. Tongue heavily coated in its middle, clean at the tip and edges. The patient was stated to be in the eighth month of pregnancy. The beat of the fœtal heart was distinctly heard on a line with the umbilicus, one inch and a quarter to the right of the linea alba. Patient's mind seemed confused and her articulation was hesitating and indistinct. On inquiry, it was ascertained that she had been troubled for some months with supra-orbital neuralgia, and that, thirteen days before entering the hospital, while attending the funeral of one of her children, she was suddenly seized with sharp pain in the forehead, extending backwards to the occiput, and laterally to a spot behind each ear. This pain had continued up to the time of her admission. There had been no alvine evacuation for twelve days, and no discharge of urine for thirty-six hours. Appetite small; thirst constant.

The patient was immediately put to bed, the urine drawn by the catheter, and enemata were directed. Heat was applied to the feet and ice to the head. Two leeches behind each ear.

July 17th.—No operation from enemata. Repeat. Castor oil an ounce, *statim*. Urine again drawn by catheter—fourteen ounces, dark colored and offensive. Patient complains of much pain in the temples; pulse 128. Apply leeches to seat of pain.

July 18th.—Less pain in head; two dejections from oil and enemata; pupils slightly sensible to light; no voluntary evacuation of urine; pulse 100; skin cool and moist. Ice to head, constantly.

July 19th.—Slept but little; natural evacuation of bowels and blad-

der. Complains of a feeling of numbness in her left side and arm; pupils more sensitive to light; pulse 96; some appetite.

The records of subsequent days show a rapid improvement in the patient's condition. Leeches were twice applied for relief of pain; the pulse gradually diminished in frequency, and improved in character. The strength was sustained by wine, beef-tea, &c., and, on the 30th of July, she left the hospital, well. She imprudently walked a long distance, and next day was ill from fatigue, but rallied immediately, and is now well.

The case, sufficiently severe in itself, derived additional interest, and, as it was thought, gravity, from the woman's condition physiologically.

Pleurisy; Thoracic Abscess, with fistulous opening; Diarrhœa; Death.—James Noble, aged 39 years, entered the Hospital July 14th, 1864. He stated that two months previously he had an attack of pleurisy on the right side, the pain being confined to a small spot under the 7th rib, and, to use his own expression, "it cut his breath." There was some cough, but no expectoration. The pain continued until the 12th of July, when it was relieved by the opening of the abscess and evacuation of the pus at its seat. A probe passed inwards and slightly upwards, over the border of the 8th rib, to the depth of 4½ inches. The patient, whose bowels had been constipated up to the time when the abscess was evacuated, was attacked with a diarrhœa which no modification of diet and no remedies could control, and which resulted fatally on the 15th of August. He was excessively emaciated, and debilitated to the last degree. On his admission, every effort was made to recruit his strength by nourishing food and tonics, but all without avail. There was probably ulceration of the bowels. No *general* necroscopic examination could be obtained. On *local* examination, *post mortem*, the upper border of the 8th rib was found necrosed for 1¾ inches from the sternal end. Beneath it was a cavity extending upwards to the 5th rib and downwards to the upper surface of the diaphragm—4½ inches in length by 2½ inches in breadth. No communication with the lungs could be found.

The patient could force pus readily through the fistulous opening by expiratory effort. Pressure and injections of iodine were employed, and the external opening was once necessarily enlarged with a bistoury, to facilitate the discharge of matter. The necrosed bone was detected by the probe during life.

Sept. 26th.—*Ulceration of the Small Intestines, differing from the Form usually described; Perforation; Chronic Ulcers of the Stomach.*—Dr. Ellis showed the specimen, which came from a patient who died in the Mass. Gen. Hospital, under Dr. Minot's care. He was a married man, 38 years old, a shoemaker by trade, and healthy till November, 1863, when he had, he said, an attack of dysentery, followed by diarrhœa, which continued ever since. He generally had three or four loose dejections daily. In March the stools were bloody for a time. At his entrance, Aug. 15th, he was very weak, had diarrhœa without pain, and complained of pain and tenderness in the right hypochondrium. There was a feeling of oppression and pain after taking food, on account of which chronic ulcer of the stomach was suspected. The patient also complained of much pain in the right side, on long inspiration, on account of which the decubitus was always on the left

side. There was also slight cough, without expectoration, and severe night sweats. He remained tolerably comfortable, sitting up almost every day until Aug. 17th, when he had severe pain in the bowels after a dejection. The pain occurred again the next day, under similar circumstances, and was accompanied by much tenderness in the epigastrium; pulse 108. On the 19th, there was much tenderness in every part of the abdomen, much thirst, pulse 108; but the patient rested pretty well. He continued for several days in a state of prostration, the pulse gradually rising to 120, till the 22d, when he died.

The perforation probably took place on the 17th, and it is remarkable that the symptoms of peritonitis were so slowly developed, and that life was prolonged to such a degree.

At the autopsy, twenty ounces of serum, with some white fibrinous coagula, were found in the right pleural cavity. External surface of the lung covered with a pretty thick and firm layer of white fibrin, evidently not old. Old adhesions at the apex.

Just beneath the pleural surface of the upper part of the right lung were several yellow, rounded bodies, perhaps two lines in diameter, which resembled tubercle, but, if such, they were latent. Lower lobe compressed and œdematous. Two or three firm, grayish nodules in the median portion of the left lung, but none elsewhere. Lower lobe œdematous.

The peritoneal cavity contained upwards of two pints of serous pus, and a thick, yellow, curdy matter, by which portions of intestine had been glued together.

The mucous membrane of the stomach was pale. In the small curvature, nearer the pyloric than the cardiac orifice, were two chronic ulcers, with firm, smooth, sharply cut margins, and firm bases, extending apparently to the submucous cellular coat. They were regularly rounded, and about half an inch in diameter.

On inflating the intestines, air escaped from an opening, perhaps half a line in diameter, situated between six and seven feet from the pylorus. The small intestine was more or less ulcerated throughout, the ulcers being of a peculiar character. In some places there were seen small, round, white elevations, perhaps two lines in diameter, and perfectly movable with the mucous membrane. As these increased in size, ulcers formed in the centre, and the base became attached to the submucous cellular, and afterwards to the muscular coat. But little disposition was shown to penetrate the latter, the disease progressing not by the immediate destruction of the old tissues, but, rather, by the formation of a firm new material, which was afterwards destroyed by the ulcerative process. This was seen even in ulcers of large size, which could be stripped from the muscular coat, with the new material, which they occupied. Two, however, which extended entirely round the intestine, had invaded the tissues more deeply, and in one of them was the perforation above described. The ulcers were very numerous, and of all sizes, from the mere pit in the centre of the small, white elevations, to those which girdled the intestine; but in all cases the margins were firm, elevated and white. A very large one, with a deeply excavated margin, was situated only an inch below the pylorus. The bases of many were covered with a yellow, fibrinous material, and the peritoneal coat beneath some of the deepest had a somewhat fibrous or cicatrized look. Most were quite pale,

but the bases of some were blackish, and the intervening mucous membrane at many points presented the dark slate color which so frequently follows chronic irritation. This was quite noticeable in the last foot, where there were no ulcers. The mucous membrane here had also a dull, diseased appearance.

On microscopic examination of the new material which formed the bed and boundary of the ulcers, it was found to be composed of fibroid tissue, some fibro-plastic elements and many small nuclei with small nucleoli, not unlike those of the mesenteric glands.

The large intestine was normal. The contents throughout were quite thin and more or less yellow.

The mesenteric glands were much enlarged, and almost white. The microscope showed that the increase of bulk was owing to the multiplication of the nuclei which belong to them.

The left lobe of the liver was quite small; its edge thin and fibrous. Substance rather pale. The gall-bladder contained a large quantity of thin bile.

Other organs normal. Head not examined.

The above case is one of great interest; for, bearing in mind the peculiarities of the disease, it is found impossible to assign to it a place among the established varieties of intestinal ulceration. An opportunity being afforded to trace the successive changes which take place, we are forced to admit that the formative process plays as active a part as the destructive, and in all probability precedes it. It is precisely what is seen elsewhere in many new growths, in which the great productive power is attended by an equally great tendency to decay. Such cases may, perhaps, be found in some periodicals, but none of the general treatises by the highest authorities describe any form of ulceration which can be recognized as similar to this.

Sept. 26th.—*Malformed Rectum.*—Dr. Warren showed a specimen of malformed rectum. The patient was a little girl upon whom he had operated about fourteen months since, for imperforate anus; and an account of the case may be found in a paper read before the Suffolk District Medical Society, May 28th, 1864.* In this case an opening existed between the rectum and vagina, so that the alvine discharges took place through the latter canal. The operation, which consisted in making an incision in the situation of the anus, drawing down the rectum, and stitching its margin to the integuments, was completely successful—a large and well-formed canal being established in the normal position, through which she had solid dejections, while the more liquid fæces still made their way through the vagina. On account of the age of the child, it was decided to postpone till a later period an operation for closing the communication between the rectum and vagina. The child continued well until a few weeks since, when it was attacked with gastric irritation, and died, Aug. 4th.

The following extracts from a letter from Dr. Cox, of Salem, the attending physician, give an account of the *post-mortem* appearances:—"On Tuesday, the 2d, I first saw her. She had constant nausea, and vomited almost everything she took into her stomach, and had no alvine discharges. These symptoms continued, more or less urgently, till her death, on the 4th, except that the bowels were slightly moved

* See Boston Medical and Surgical Journal for July 14, 1864.

several times. Independently of the state of the atmosphere of late, this condition was perhaps remotely caused by a malformation and transposition of the large intestine, in consequence of which a free and thorough evacuation of the organ seldom if ever took place. * * * * The rectum ascended from the anus to the right iliac fossa, thence up through the right lumbar region to the under surface of the liver, touching the gall-bladder. Then it bent sharply downwards, and descended, in contact and parallel with the ascending portion, to the right iliac fossa. The colon then crossed the lower part of the abdomen to the left iliac region, up through the left lumbar region, almost to the stomach, terminating in the cœcum. * * * The portion discolored with bile, from its contact with the liver, is where the sudden and abrupt bend of the organ downwards took place. This sharp flexure must have proved a serious obstruction to the evacuation of the bowel. From this turn to the caput coli the bowel was very much distended with flatus, and contained more than a quart of soft fæcal matter, of the consistency of thin mortar. The only other morbid change found was an injected and softened state of the mucous coat of the stomach."

An incision being made in the back part of the rectum, near the anus, displayed a very great contraction of that organ just before its original termination in the vagina. In fact, following this contraction was a cul de sac which communicated with the vagina, about its middle, by a delicate valvular opening; the artificial anus continued the intestine down to its natural external termination. It will be understood, therefore, that instead of a free communication between the intestine and vagina, there was a plaited condition of the mucous membrane, as in the ordinary termination of the canal.

Dr. Warren called the attention of the Society to the fact, that the descending colon in this, as in one of the published cases referred to, was transposed, so that any operation for artificial anus, as usually practised in the left lumbar region, would necessarily have failed of its object. He also adverted to the very interesting fact, exemplified in the present case, and to which the attention of the Society had many years since been called by Dr. J. B. S. Jackson, viz., the very constant termination of the intestine in the vagina in cases of imperforate anus in the female. Dr. J. has also remarked that in all the cases of simple imperforate anus that he has examined in the male subject, a small opening has been found between the rectum and the membranous portion of the urethra; and this opening in the male he regards as analogous to the one above referred to in the female.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, OCTOBER 20, 1864.

COMMUNICATIONS TO THE RHODE ISLAND MEDICAL SOCIETY FOR THE YEARS 1863-64.—We by no means expect from the Medical Society of our geographically but in no other sense small neighbor, Rhode Is-

land, so voluminous a volume of transactions as we should look for from the Empire State, and so we are not disposed to make disparaging comments on the modest pamphlet of forty pages which contains the record of its proceedings for the present year. We are glad to see each State in turn, at its annual meeting, doing its part in keeping alive a spirit of professional emulation, and a desire to contribute something to the common stock of medical literature. The annual accessions to our positive knowledge from this source are getting to be in the aggregate something that the members of the profession in America may well be proud of, and every year shows a more evident purpose to make these accessions more worthy of a permanent place in the annals of medicine. Rhode Island contributes in this way for the present year but two strictly professional papers, but they are both interesting.

The first of these is a history of a case of comminuted fracture of the skull, with depression to the depth of half an inch, reported by Dr. Henry E. Turner. The operation of trephining was done several days after the accident, the dura mater being found to be perforated, admitting the first joint of the thumb into the vacancy in the cerebrum. The case terminated successfully, and Dr. Turner expresses the opinion that, although he should not feel justified in opening the dura mater under such circumstances, it was owing to the fact of such an opening existing in this and a previous case in his practice of a similar character, that recovery took place. Dr. Turner also reports a case of recovery from tetanus under treatment by opium.

The second paper is by the same author, on the Typhoid Dysentery which prevailed in Newport during the latter part of the summer and the autumn of 1863. This epidemic will be fresh in the memory of many of our readers, exciting as it did at the time such serious apprehensions and numbering among its victims some of our well-known citizens. The reputation of this watering place as a peculiarly healthy resort made the epidemic in question all the more serious to the community at large, as numbers were exposed to its influence who had come from distant homes. We have seen no attempt hitherto to explain the unusual prevalence of this disease in Newport. Dr. Turner is inclined to attribute it to an exceptional prevalence of east winds. He says:—"The prevailing wind, during the summer of 1863, instead of being, as it usually is, from the southwest, was from the east; and the weather was damp, and the heat oppressive, in a degree very seldom experienced in Newport. The declivity upon which most of the city is built fronts the west, and, of course, the southwest winds coming directly from the sea, and generally blowing hard for several hours every day, ventilate the streets and yards very thoroughly; whereas, the town is almost entirely sheltered from easterly winds, and, during their prevalence, we are unconscious of any wind at all. This may serve, in some measure, to explain the matter."

The disease was very fatal, and even where the symptoms were not severe was unusually persistent and intractable to the usual remedies. At a charitable institution known as Coasters' Harbor the mortality in six weeks was more than ten per cent of the inmates, and this in a situation "dry, elevated and airy." Whereas, in the garrison of 150 men at Fort Adams, on the other side of the harbor, and equally distant from the city proper, there was not a single case of dysentery;

although the men lived more or less irregularly, as soldiers will who have the privilege of frequent visits to a city of the size of Newport.

The disease seems to have been as capricious in its attacks as some of the epidemics of cholera and diphtheria have been, striking where we should least have looked for it, and passing over localities naturally calculated for its habitat. Thus "the localities where it most prevailed were not those where it would have been most expected; it was a very different quarter of the city, and a very different class of people which suffered, from those which were visited by the cholera in 1854. It was not, as in that case, the poor and foreign population, surrounded by privation and filth, and bad drainage and negligence; but it was the well-to-do people, in the central and respectable streets, who were the victims; and so far as I know, the wharves and poorer streets, which suffered most from cholera, were unusually free from disease."

The mortality was so great that during the months of August, September and October the average of deaths was 37 per month, whereas during the previous two years it had been but 13 per month; a very high death rate for a place usually so healthy.

A critical report, by a Committee of the State Society, on the plan of the proposed Rhode Island hospital, is an interesting feature in the publication before us. We are glad to learn that Rhode Island is to have a hospital of her own, and that its construction is to be based on such wise and mature deliberation as the report before us indicates. We have no doubt it will be a model institution.

The usual obituary notices of deceased members, and the records of business meetings, &c., complete the pamphlet.

New Use of Electricity.—The *Medical and Surgical Reporter*, of Philadelphia, describes a new application of electricity to household use, which promises to be of great public utility. The *electric bracket*, by Robert Cornelius, of that city, is designed as an attachment to the ordinary gas burner, "by which the gas may be lighted at any moment by the instantaneous production of a spark of electricity." It consists of an instrument by which simple friction of two surfaces is furnished by a movement as simple and easy as the turning of a key. The apparatus is attached to the bracket, and connected with the gas burner by a fine copper wire covered with silk, and terminating in a platinum point one sixteenth of an inch from the aperture of the burner. Merely lifting a rubber plug from its bed in a cup lined with lamb's wool and silk, which constitutes the apparatus, produces a spark which darts from the platinum point to the burner and ignites the escaping gas.

The Deaf and Dumb.—In a paper recently presented to the French Academy, Dr. Boudin gives the following curious statistics: Marriages of blood-relations form about two per cent. of all marriages in France; the deaf and dumb offspring, by birth of consanguineous marriages, are in proportion to the deaf and dumb born in ordinary wedlock—at Lyons, at least twenty-five per cent; at Paris, at least twenty-eight per cent; at Bordeaux, at least thirty per cent. 2. The

proportions of the deaf and dumb, by birth, increase with the degree of blood-relationship. If the danger of having a deaf and dumb child in ordinary marriage, represented by figures, is one, there will be eighteen in marriages between first cousins; thirty-seven in marriages between uncles and nieces; seventy in marriages between nephews and aunts. 3. At Berlin we find thirty-one deaf and dumb to ten thousand Catholics, six deaf and dumb to ten thousand Protestants, twenty seven deaf and dumb to ten thousand Jews. In other words, the proportions of the deaf and dumb born grow with the facility religion affords to consanguinity in marriage. 4. In 1848, twenty-three deaf and dumb born of ten thousand whites were counted in the territory of Iowa (U. S.), and two hundred and twelve deaf and dumb among ten thousand slaves; a shocking proof how little our social, moral and religious laws are considered valid for the slaves. 5. The misfortune of being born deaf and dumb falls not always directly from parents wedded in consanguinity; it appears sometimes indirectly from marriages in which one of the parents issued from wedlock between blood-relations. 6. The most healthy parents, but related in blood, may have deaf and dumb children; while deaf and dumb parents, but not blood-related, very rarely beget deaf and dumb children. 7. The number of deaf and dumb born increases formidably in places where natural obstacles stand in the way of cross-marriages. Thus we have the proportion of the deaf and dumb, which in France in general is six among ten thousand inhabitants; in Corsica, fourteen in ten thousand; in the High Alps, twenty-three in ten thousand; in Iceland, eleven; in the Canton of Berne, twenty-eight. 8. The number of the deaf and dumb in Europe may be reckoned at about 250,000. —*Annual of Scientific Discovery.*

The American Pharmaceutical Association met in Cincinnati on the 21st ult. A large number of members from various parts of the United States were present. Mr. W. J M. Gordon, of Cincinnati, was elected President, and Mr. H. N. Rittenhouse Recording Secretary. In September of next year the Society are to meet in Boston.

At a meeting of the surgeon dentists of Boston and vicinity, last week, an association was formed, to be known as the "United States Surgeon Dentists' Protective Union," for the purpose of protecting dentists against unlawful claims on patents, and for mutual fellowship. A constitution and by-laws were adopted, and the following officers elected:—President, J. Wetherbee, D.D.S., of Boston. Vice Presidents, A. Lawrence, M.D., of Lowell, F. N. Seabury, D.D.S., of Providence. Recording Secretary, Dr. E. G. Leach, of Boston. Corresponding Secretary, E. C. Rolfe, M.D., of Boston. Treasurer, N. C. Keep, M.D., of Boston. Directors, Dr. D. K. Hitchcock, J. A. Salmon, J. McDougall, R. Cutter, E. N. Harris, of Boston; S. Mallet, New Haven; W. N. Martin, Providence; S. T. Locke, Nashua, N. H.: O. R. Port, Brattleboro'; W. F. Searle, Springfield. The Association will hold a convention in Chicago in August, 1865.

Prof. J. H. Armsby, of Albany, has again performed the operation of ligature of the subclavian artery. The patient was Maj. J. C. Kloch, of the 153d N. Y. Reg't, who was wounded by a shot in the shoulder at the battle of Winchester. On the twenty-first day after

the wound, alarming hæmorrhage occurred, and Dr. A., on being sent for, applied a ligature, as above stated, to the great relief of the patient—being the second time within the year that he has performed this operation. The Major is represented as doing well.

The Medical Department of the University of Nashville, Tenn., still holds its course of instruction, chiefly under the management of Dr. W. K. Bowling.

Dr. L. P. Savery, a well-known and respected physician in Denmark, Me., was reclining in his carriage on the 10th inst., when some portion of his harness gave way, and his horse became unmanageable, throwing him out and injuring him internally, so as to cause his death in a few hours.

At the recent battle of the "Opequan," near Winchester, Va., Sept. 19th, Dr. Isaac Smith, Jr., Asst. Surg. 26th Mass. Vet. Vol., while on the field humanely attending to our heroic brave, received a severe wound in the joint of the first toe of right foot, at the metatarsal and phalangeal articulation. He is now at his father's residence in Foxboro', the wound doing well.

At the Cumberland Hospital, located about a mile and a half from Nashville, Tenn., the daily average of patients in August was 2,891; attendants, 190. Total patients and attendants, 3,081. There were washed and ironed daily, Sundays excepted, 2,500 pieces. Total cost of provisions, during the month, at Government prices, $20,996 55.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, OCTOBER 15th, 1864.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - - -	49	39	88
Ave. mortality of corresponding weeks for ten years, 1853—1863,	38.3	39.2	77.5
Average corrected to increased population - - - - -	00	00	84.87
Death of persons above 90 - - - - - - -	0	0	0

ERRATUM.—In the last number of this Journal, page 227, line 33 from top, for "intercept" read *interrupt*.

TO CORRESPONDENTS.—A letter from our Philadelphia correspondent came too late for insertion in this week's issue. Several other papers have come to hand, and will receive early attention.

BOOKS RECEIVED.—Alcohol; Its Place and Power—By James Miller: The Use and Abuse of Tobacco—By John Lizars. Philadelphia: Lindsay & Blakiston.—Theory and Practice of the Movement-Cure, &c. By Charles Lafayette Taylor, M.D. Philadelphia: Lindsay & Blakiston.—The Philosophy of Marriage, &c. By Michael Ryan, M.D. Philadelphia: Lindsay & Blakiston.

DIED,—At the Pensacola, Fla., Naval Hospital, on 1st inst., of remittent fever, Dr. Henry L. Dearing, Act'g Ass't Surg. U. S. N., attached to steamer Genesee.

DEATHS IN BOSTON for the week ending Saturday noon, Oct. 15th, 88. Males, 49—Females, 39.—Abscess, 1—accident, 1—apoplexy, 2—inflammation of the bowels, 1—congestion of the brain, 2—disease of the brain, 2—bronchitis, 1—cancer, 1—cholera infantum, 4—consumption, 17—convulsions, 2—diarrhœa, 3—diphtheria, 1—dropsy, 1—dropsy of the brain, 5—drowned, 1—dysentery, 1—erysipelas, 1—scarlet fever, 2—typhoid fever, 4—disease of the heart, 3—infantile disease, 1—intemperance, 1—congestion of the lungs, 1—inflammation of the lungs, 4—marasmus, 3—old age, 2—paralysis, 1—premature birth, 4—puerperal disease, 2—scrofula, 2—smallpox, 1—disease of the spine, 1—suicide, 1—unknown, 8.

Under 5 years of age, 37—between 5 and 20 years, 5—between 20 and 40 years, 20—between 40 and 60 years, 18—above 60 years, 8. Born in the United States, 53—Ireland, 28—other places, 7.